

**The County of Maui Department of Water Supply, Plant Operations Division** proudly manages an extensive groundwater system that reflects the unique balance of natural abundance and sustainability cherished by the people of Maui. Our system includes 46 deep wells, over 750 miles of water mains ranging in diameter from 2 to 36 inches, and 145 storage facilities. Annually, we pump approximately 30,000 acre-feet of life-giving water from our island's basal aquifer.

As stewards of our island's precious water resources, we continually seek innovative and reliable technologies to enhance our operations. One such pursuit has been the search for a trouble-free, cost-effective chlorine analyzer and sensor. These analyzers must function effectively under variable sample pressures while remaining dependable in remote, unmanned locations—integral to maintaining water quality across our diverse island landscape.

Currently, we utilize Hach chlorine analyzers, with residual chlorine levels verified through routine grab samples during site visits. However, challenges such as air locking, low sample pressure, and issues with sample tubing have led to frequent false alarms.

Traditional amperometric sensors and DPD instruments typically generate waste streams. Amid ongoing drought concerns and a shared commitment to water conservation, we recognize the critical need for more efficient and sustainable technologies.

In 2012, inspired by a publication on continuous ballast tank chlorine measurement, we explored and purchased an early model of the Halogen seawater chlorine probe. Unfortunately, the technology at the time did not align well with our application needs, leading us to continue using American Sigma and Hach units.

Fast forward to 2024, when Michael and Travis Silveri extended their aloha by traveling over 2,500 miles to introduce us to their new MP5 sensor. Their dedication and expertise showcased the significant advancements made since the 2012 model. Following their presentation, we agreed to pilot-test the unit. By June 2024, we were delighted to witness how seamlessly the unit started up and maintained calibration. Encouraged by its performance, we relocated the unit to a remote site with low and variable sample pressures, which had chronic issues due to the technological limitations of older sensors. Since its installation, the Halogen MP5 has continued to operate successfully. This pilot unit has since become a permanent part of our operations, and we look forward to integrating additional units in the future. This includes some challenging remote sites where older technology sensors are particularly difficult to operate and maintain.

For future expansions of the Halogen units, we are committed to aligning with US-EPA Method 334 for groundwater compliance monitoring, ensuring that our practices meet the highest standards.

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### Unique Features

- **Flow Independent:** Operates effectively without being influenced by flow or pressure variations.
- **Self-Cleaning:** Reduces maintenance needs—a significant benefit for remote operations. Calibration intervals have been minimal, with months between calibrations. With manpower challenges, labor savings are essential for our mission-critical operations.

- **5 Parameters:** Measures multiple parameters simultaneously, enhancing operational efficiency.

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### Initial Flow Cell Installation

- Operating since June 2024.
- Started up without requiring significant calibration or flow adjustments.

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The adoption of the Halogen MP5 sensor symbolizes a leap forward in achieving reliable, efficient, and sustainable chlorine monitoring for Maui's groundwater operations. This step reaffirms our commitment to protecting and preserving the water that nourishes our 'āina and sustains our vibrant Maui community.

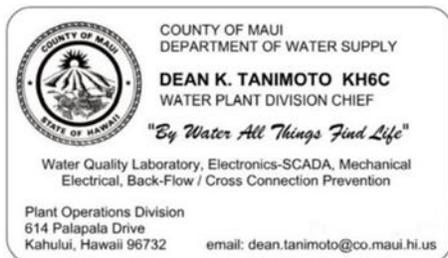


Photo of our pilot unit:

